



PEDAGOGY OF 'DIRTY' HANDS: REFLECTIONS FROM AN URBAN TERRACE FARM

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Urban areas are often viewed as a source of ecological 'problems' rather than solutions. This article presents the rationale, pedagogical implications, and student responses to a school project aimed at raising and sustaining an urban terrace farm. Through this example, it explores some themes that educators could engage with in urban areas.

At 7:00 am, the morning light is feebly making its way through the smog engulfing Mumbai in winter. Most people might want to stay snug in their beds, but at least 20 teenage children are excitedly running up to the terrace of their school. "*The cabbage seeds have sprouted!*" exclaims a girl, gingerly touching a tiny leaf. Elsewhere, a group of students are debating ways to handle a pest attack on one of the plants. Some of the students taste the leaves of the Indian Roselle (*Ambadi*), and enthusiastically encourage others to try it; "*Arey taste kar, khatta hai! Mast taste hai!*". For the next hour, these students work diligently towards mulching, sowing, harvesting, observing, and exploring over 20 varieties of edible plants that comprise their terrace 'farm'. In less than a year, a barren terrace, usually locked out of view, has become a hub of activity and neighbourhood attraction.

Terrace farming: A revolution on rooftops

Urban areas are generally far removed from areas of food production. Typical food products travel hundreds of kilometers, burning fossil fuel for transport and cold-storage, before being packed into plastic wrappers and displayed in grocery stores. Turning the basic necessity of food into a commodity so far removed from its source creates a pool of passive urban consumers who are unable to build or understand a relationship with food that goes beyond monetary transactions. Wendell Berry, a farmer and environmental activist, suggests that growing food responsibly may be the first step in reclaiming our connection with land. Farming as an activity naturally provides a space to raise questions and develop an integrated understanding about weather, food, nutrition, the economics of food production, water, and local geography.



Ecological Benefits

- Increased Biodiversity
- Decreased Food Miles
- Reduction in Urban Waste



Economic Benefits

- Local Food Security
- Local Income Generation
- Productive use of Space



Social Benefits

- Avenues for Recreation
- Local Community Empowerment
- Improved Quality of Living

Fig. 1. The ecological, economic, and social benefits of urban farming. Each of these can be a theme for discussion and research with students.

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The scarcity of land in 'megacities', like Mumbai, has led to the emergence of an interesting alternative – using rooftops to grow food. Many individuals and volunteer groups are now growing a

variety of fruits and vegetables on their rooftops using traditional and organic farming principles. These have had encouraging results, both in terms of yield and the health benefits of engaging

in the physical activity of farming. This practice has improved awareness of and access to fresh, seasonal, and local food. Food growers often come together to share their knowledge and skills (in identifying local vegetables and sowing times, developing recipes, and finding ways to care for their plants etc.) in ways that contribute to a sense of community. Terrace farms also provide a venue for compost from biodegradable household waste, which would otherwise contribute ~50% of the waste dumped at landfills. They improve urban biodiversity by creating habitats for insects, reptiles, and birds (see Box 1). These farms can also contribute to better air quality and micro-climate regulation in the long run (see Fig. 1).

The pedagogy of 'dirty' hands

Being able to provide students with authentic experiences of engaging with the local environment is important in fostering an understanding of diverse ecological

Box 1. Biodiversity on the terrace farm:

Despite its modest size, the school terrace farm is visited by many butterflies, dragon flies, lady birds, lizards, snails, sparrows, and spiders. Organisms frequently seen in the soil include earthworms, centipedes, millipedes, and beetles (see Fig. 2).

Student observations and interactions with the farm's biodiversity have the potential to open up larger discussions on conceptions of the 'human–Nature' relationship. For e.g., on spotting a bee caught in some water collected at the base of an upturned leaf, some students promptly went about 'rescuing' it by draining the water, and letting it fly away. Other students wondered if we should have interfered in the bee's fate, since Nature is believed to operate on the principle of 'survival of the fittest'.

As the farm has flourished, students have started appreciating the role of different organisms in the process of growing food. For e.g., sightings of lady birds and ants near an aphid infestation on some plants provided tangible examples of food webs that might exist on the farm. In another instance, some students expressed their willingness to 'share' the farm harvest with giant snails (usually considered a pest) because "*the snails also needed some food*".



Fig. 2. Some frequent visitors to the terrace farm. (a) A bee on the Blue Spike plant. (b) A butterfly on the terrace. (c) Students discovering snails on their farm.

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practices. While schools are an integral part of any community, the notion of experience tends to get simplified and uncritical within the structure of formal education. Many activities, especially those meant to nurture environmental sensibilities, tend to take the form of tokenistic actions (planting saplings on Earth day, making 'Save the Tiger' posters etc.) without the possibility of any feedback or consequence. On the other hand, textbooks are filled with bleak scenarios of environmental degradation, leaving students acutely aware of 'big' problems, but disempowered to bring about any transformation in their own locality. Many educators have, therefore, argued for the need for 'authentic participation'. This involves experiences where students feel a sense of ownership, and take responsibility for the task at hand. However, this isn't the same as unguided learning; rather, it is conducive to collaborative learning environments where knowledge isn't seen to be transmitted only from teacher to student.

Box 2. Why a farm?

The usage of the term 'farm' as compared to a 'garden' reflects the project's emphasis on cultivation of food crops rather than purely ornamental plants. The farm was designed with a focus on sustainable practices intended to challenge the idea that conservation necessarily happens in uninhabited places, far from human influence. While there are legitimate arguments for conservation of sensitive areas, simply treating urban spaces as 'human' problems, and 'Nature' as being some faraway pristine place is problematic for several reasons. Firstly, it creates an artificial separation between humans and the surrounding environment. Secondly, it discourages the idea of humans developing a 'positive' relationship with Nature based on care, and empathy. Lastly, by shifting the onus solely on city-planners and government policies, it disempowers people from taking ownership and responsibility for improving their own neighbourhoods. From this perspective, starting a 'farm' was a deliberate choice with certain ecological and political commitments.

Combining ideas of 'authentic participation' with possibilities of practice in terrace farming (see Box 2), a class of VIII graders from a Central Board of Secondary Education (CBSE) school were involved in setting up an edible farm on their school terrace (see Box 3). The school managed to allocate an hour every week, in the mornings, for this ungraded project. With the coming together of a small core team – consisting of a researcher, a couple of teachers (who facilitate the school nature club) and two enthusiastic school gardeners – the project began to gradually take shape (see Box 4).

To meet the initial need for organic matter, the core team began with digging a small compost pit in one corner of the school grounds. Students began collecting dry leaves (from the neighborhood) and raw kitchen waste (from the school canteen) for composting. This collection activity led to discussions about plastics and other non-degradable materials found in household waste. In the meanwhile, discarded cardboard boxes and plastic

Box 3. Edible plants – eat what you grow!

The term 'edible' plants is used here to refer to plants whose parts can be eaten by humans in raw or cooked form. In the initial stages of the project, the core group selected plant species based on their ease of growing, availability (with a focus on locally grown species), and diversity (tubers, cereal grains, fruits, and leafy vegetables). This included lemon grass, ova (Ajwain), ladyfinger, sponge gourd, sweet potato, Indian roselle, chillies, brinjal, radish, cabbage, spinach, waterleaf, and millets etc. A few flowering plants (e.g., marigolds, blue spike, periwinkle) were included to attract pollinators. Some herbs (e.g., mint, basil, spearmint) were included for their shade tolerance and ability to act as pest repellents (due to their strong smell). Some leguminous plants (e.g., moong, beans, tur dal etc.) were cultivated for their ability to improve soil fertility by 'fixing nitrogen'. In later stages of the project, some plant species germinated from the compost itself. The farm also grew with some contributions from interested parents.

Harvesting plants had the tangible output of helping students stay invested in the project, and derive a sense of achievement from it (see Fig. 3). Getting a sense of the range of issues, time, and patience required to grow and harvest healthy vegetables helped students draw connections between their work and the immense effort that farmers invest in feeding us.



Fig. 3. Students with their first harvest.

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bottles were used to grow plants (see Fig. 4). Within a month, saplings of several herbs and greens were planted. Some plants, such as pumpkin,

pomegranate, papaya, and guava, grew from the compost itself, much to the delight of the students. Slowly, the farm started to expand.

The project used farming principles that combined the core group's tacit understanding of sustainable farming with the pedagogical goal of linking

Box 4. Initiating and sustaining a school project:

Since most schools have very tight schedules, initiating an extra-curricular project like the urban farm requires the support of the principal or school management. Aligning project goals with the broader aims of the school can be useful in getting this support. For e.g., the principal of this school was keen on introducing students to better waste management practices because the school's proximity to a landfill made this quite a tangible problem. Thus, the facilitator's emphasis on a terrace farm's role in introducing concepts such as composting and reuse of discarded materials to grow food helped ensure the principal's support for it. A general guide to approaching school management for projects such as these is available

here: <https://www.youcan.in/single-post/2016/05/03/approaching-a-school-principal>.

To sustain such a project, it is also important to ensure that it gets some in-house support rather than being entirely dependent on external (to the school) help. In addition, teachers can help tailor the project to meet the needs and routine of the school. For e.g., the core group of the terrace farm includes teachers responsible for nature club activities in the school. It also involves an ongoing effort to include other subject teachers.

Designing the project to ensure that the time and effort it requires does not disrupt other school activities plays a vital role in sustaining it. For e.g., the terrace farm project was initially designed

to involve 20 students working for two hours every week. However, it was only possible to carve out an hour of student time every Saturday. Similarly, given the packed academic schedules of grade IX and X students, the first batch of students involved in the project were from grade VIII. This trend has continued, and students who graduate each year are invited to mentor students from the successive batch for a month. This has helped create a student 'teacher-learner' community across different grades. In the coming year, based on student interest (and that of their parents), the terrace farm may be opened once every fortnight for volunteer work. In this way, older students will have the opportunity to continue participating in the project outside school hours.



Fig. 4. Carboard planters are used to grow a variety of plants.

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Materials on the farm	Supporting practices	Implicit views guiding the practices	Possible questions for discussion with students
Nutrient rich soil	Collecting dried leaves and organic waste, making compost	Recycling of nutrients, redefining waste as resource	How much organic waste is produced in the school? What are the stages of composting? How long does it take? What are the different methods of composting?
Dilute cow-urine, dung, jaggery	Adding to soil and compost	Microorganisms as a core part of soil; symbiotic relationships	How does the soil look under a microscope? Is cow dung like a 'probiotic' for soil? Is it possible to distinguish roots of different plants from their smell?
Seeds	Saving seeds	Maintaining the cycle of life; seed sovereignty; stewardship	What are the major stages of a plant from seed-to-seed? How can seeds be saved for next season? How to select a fruit whose seeds will be saved? Why do farmers need to buy seeds? What is seed sovereignty?
Planters	Designing low-cost planters; making trellises	Frugality; reuse and recycle; locally sourcing materials	How to make a planter? What are the characteristics of a good planter? What kind of local materials could be used to build one?
Fruits and vegetables	Responsible harvesting	Stewardship; responsibility; reciprocity	How to choose vegetables and fruits for harvesting? Which vegetables are seasonal? How much would they charge for the vegetables they grow? How do their prices compare with the market price?

Fig. 5. A description of the core practices on the farm, and the perspectives underlying such practices. Topics for discussion can evolve around students' experience of these practices. A few are illustrated here.

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different aspects of the environment in tangible ways (see Fig. 5). Consequently, students were exposed to these principles **through their sustained participation** in activities involving them, rather than explicit explanations. For e.g., over the course of the project, students became quite particular about mulching because they had observed that mulched soil (soil covered with biomass, such as dry leaves, or tiny creepers, such as mint and clover) remained soft and moist, while exposed soil tended to become compact and hard. Similarly, the realization that seeds would be needed for planting in every season and one couldn't always rely on getting new seeds from the market led students to recognize the importance of seed saving.

While core practices were followed regularly, day-to-day activities on the farm were largely contingent on the weather, status of the plants, and any other task on the farm that required immediate attention. For instance,

during the monsoons, many of the cardboard boxes that were used as planters had to be moved around to allow the rain water to run off the slope of the terrace. The boxes had to be repeatedly reinforced with coir ropes and cardboard pieces to maintain structural integrity, and supports had to be constructed for growing creepers to climb on. Similarly, the higher bout

of plant infections and diseases had to be tackled with various organic methods. However, the unpredictability of the project helped students see it as a 'real' thing rather than just another school assignment. They saw the impact (good or bad) of their actions on the plants on the farm, and hence began to see themselves as being responsible for the health of the farm (see Fig. 6).



Fig. 6. The monsoons presented students with a host of challenges.

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What did I do at the farm today? (Students can fill in details in these categories)

- Sowing
- Transplanting
- Plant care (making support, adding neem powder, cow urine, dung etc)
- Harvesting
- Seed Saving

Can draw and jot down any other information/ observation they find interesting. These are some quotes from students...

"We named the big snail Bubba. We are going to keep it in our class and feed it leaves..."

"Those malabar spinach seeds are fun to squish!"

My Mulching Diaries!



Date

Temperature

*Weather (Sunny/ Rainy/
Windy/ Cloudy etc.)*

*What did I observe/ touch/
smell/ taste at the farm today?*

*(Can include any detail they
would like to jot down)*

- Any type of insect
- Any disease on a plant
- Texture of different leaves
- Taste of a fruit/ leaf/ vegetable

A typical session would begin with students observing the farm and having a quick discussion amongst themselves, followed by a quick recap of the previous week's work. Then, tasks for the day would be listed out, and students would be encouraged to include tasks based on their own observations. Students were also encouraged to maintain their own farm journals, in which they could write about or draw out their impressions of the day (see Fig. 7).

Student responses

The open-ended nature of the project allowed for a range of student responses. Since most students came from urban, middle-class backgrounds, they found many of the interactions and observations at the farm quite novel (see Box 5). The broad themes that emerged from these responses underline some of the key factors that motivated students to participate in farm activities and widen their sphere of actions.

(a) Somaesthetic interactions

Students were observed to engage with plants in a rich, visceral manner, through senses of touch, smell and taste (instead of just their eyes). Thus, the farm seemed to introduce students to different ways of perceiving the environment. For e.g., many students had never seen the plant called Indian Roselle (*Ambadi*) before they became part of this project. Once the plant had begun to grow in the terrace farm, students were informed that its leaves and calyx were edible. In the initial stages of the project, the mere idea of eating something directly off a plant was a novel concept for most students given that most of their interactions with food were in its packaged, frozen or cooked forms. However, their apprehensions soon gave way to curiosity, and students began to touch, sniff and tentatively nibble the *Ambadi* leaves. In another example, many students were initially repulsed with the organic matter kept for composting. They began shedding their inhibitions about handling it

Fig. 7. A possible template for student journal entries. Students can be encouraged to share their experiences with peers, and make different time-lines for growth of individual plants based on their observations.

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Box 5. Student's prior experiences of gardening/farming:

Except for two children whose families owned farms in rural areas, the students involved in this project were mostly from exclusively urban backgrounds. Many of them had seen a few ornamental plants at home, but hadn't tended to them personally. In fact, a few confessed their disinterest in the activity. The following comment by a student illustrates the general sentiment:

"Earlier when my grandmother used to mention it (gardening), it wasn't a topic of much interest to me because I did not know anything about it. So I used to just avoid this topic. But now that I have seen so much happening and it is so exciting, I have started to help my grandmother out. In fact, when I told her about all this (terrace farming), then she got hyped. ... Means totally hyped. On the same day, she did not tell me, she went to the nursery, bought a few saplings, seeds, pots, mud everything and she brought it home. Now, we are growing a lot of stuff." – AN.

after seeing saplings grow out of the compost, and discovering that the compost itself, when ready to use, had a sweetish smell. Soon, they began taking an active interest in preparing compost, often smelling it, feeling its texture, and poking around to look for earthworms – the presence of which would generate a lot of excitement. Given that they had started out with a bare space, the emergence of new life-forms and relationships led them to take more actions to encourage further growth. Such engrossed participation prompted a student to remark:

"...we never even touched plants this way earlier... I mean we play on the grass, but not this way. To take care... this time we learnt how to grow the plant, otherwise it is said that just drop a seed and the plant will grow... the book says that... but now I think the book is very fake, because the book only says what the author can see, but while doing it we see many different things..." – AY

(b) Novelty and challenge

Students found some tasks particularly challenging. These included figuring out a way to use bamboo poles to provide support for climbers, or repeatedly reinforcing cardboard planters to survive the monsoons. Often, these challenges would motivate students to come up with novel solutions. For e.g., they came up with the idea of designing supports in the form of tripods, and then worked together to build these structures for the farm (see Fig. 8). They reported the process to be quite enjoyable, perhaps

owing to the fact that it involved peer validation and the tangible outcome of having a stable support for plants. As a student commented:

"...then most important was that trellis... making it was a fun job because we were trying different knots that we knew but had never really used. So, it was a very enjoyable..." – NM.

(c) Feedback

The evolving landscape of the terrace farm became an interesting form of feedback for the students, who started noticing different aspects of plant growth. This is evident in a remark made by one of them:

"...we studied that the tendrils wrap around the support, but now I actually saw how it wraps itself... we hadn't learnt about grouping plants (multi-cropping) like this.. this is new, we haven't studied like this... I saw the good effects also.. Like that ajwain plant needed some shade... under full sun it didn't have so many leaves... now under a bit of shade (under a taller plant) it has grown a lot..." – RN

Sustained engagement seemed to have been an important dimension in ensuring that students received continuous feedback regarding their efforts from other people, and from the artifacts themselves. The practice of sharing their impressions seems to have given students the impetus to widen the scope of their activities to include composting, the use of upcycled materials as planters, reducing wastage of food, and growing plants at home too.

(d) Nurturing broader perspectives

The various activities that students engaged with on the farm were gradually reflected in more thoughts pertaining to the environment in general. For e.g., plastic bottles are generally considered synonymous with trash, often ending up in landfills soon after they are bought. On the farm, however, discarded plastic bottles were cut and used as sapling containers – turning what is commonly seen as waste into a low-cost resource. For many students, the idea of recycling took on a new meaning as they began to look for other materials which could be used as planters. On the other hand, sorting plastic from organic waste for compost led to many discussions regarding its quantity in the environment. Students began questioning the use of plastic in packaging, and exploring potential alternatives. The use of dry leaves on the farm sensitized students to its usefulness as dry biomass. Not only did they make an effort to collect dry leaves from their neighbourhoods, but also attempted, in some instances, to stop locals from burning it.



Fig. 8. Students work on building support structures for the farm.

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Box 6. Social relationships around and through farm-related work:

Non-formal spaces, like the terrace farm, can help modify or build new relationships. For e.g., the farm seemed to help bring together inter-generational experiences because grandparents of the students involved in it were, in general, quite interested in the project. These grandparents now had the opportunity to share their knowledge of farming with grandchildren who seemed more receptive owing to motivations arising from their work on the farm. In another example, students expressed enjoyment in working together on the farm – a response corroborated by their class-teacher. Their teacher reported that working together on the farm had made students seem more inclined to form larger groups, and help

each other in class.

The farm also seemed to help students appreciate that some of them could have a knack for things not included in conventional academics. For e.g., one student was very good at tying knots and would often be asked for help by others. It turned out that he wasn't considered a 'good' student and wasn't very popular until his talent for knots was discovered and appreciated. Another teacher reported a noticeable change in the behavior of a student who had recently joined school. Initially quite reticent, he had started becoming quite vocal after participating in some of the farming sessions. This was because his family owned a rural farm, and the student seemed to enjoy

sharing his experiences of working on the farm as he felt that these were being valued by his peers. Another instance of this was seen when students visited an organic farm, in the outskirts of the city, that was managed by an IIT graduate. The farmer demonstrated techniques to prepare cow-dung slurry and manure, and introduced students to the variety of fruits, vegetables, and trees he'd managed to grow on his farm. The students were quite interested in the farmer's professional journey, because it challenged the stereotypical notion of what 'educated' folks can or should do. It also introduced them to the possibility of farming as a serious vocation.



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Student engagement with processes like composting, and adding cow-dung slurry and mulch to soil helped them appreciate what was required to maintain the richness of soil. For e.g., a student remarked:

"...Earlier we thought [that] soil is just something we get in packets, and plants will directly grow in it. But now we are realizing that it needs cow-dung, dry leaves, and many decomposition materials that improves the nutrients. This has really changed what I thought about soil." – DV.

Parents and grandparents have started including a trip to the farm on their school visits. Some of them have started coming regularly, as volunteers, to learn as well as share their experiences of farming. Thus, this project has evolved into a community outreach effort (see Box 6). Many students bring seeds from their villages for the farm; a few have taken to growing some of these plants in their own homes. Students are also involved in selling saplings to the neighbourhood to raise funds to maintain the farm. In this way, the terrace farm is gradually

transforming into a hub for seed and sapling exchange. In addition, the farm is beginning to get absorbed into the school's ethos, contributing to new 'teacher-learner' experiences that are based on student observations and interactions on the farm (see Box 7). For instance, a science teacher described how she had used the farm:

"VIIth and VIth [grades] where I teach as well, they have similar lessons. Like plant forms and functions and plant reproduction. So I took them to the farm for a couple of classes, I showed them around. I showed them tendrils, parallel venation, reticulate root, tap root, fibrous root. What kind of fruits? How flower grows into fruit? What part of flower grows into fruit? What is sepal, what is a petal, everything... I could see the enthusiasm on their faces because they themselves observed tendrils, how they are coiling, what kind of support. For each plant also tendrils are different, because they are from the leaf. For pumpkins tendrils are different, for bitter gourd tendrils are different. Then shape of the leaves, different shapes and colour. Cabbage, cauliflower, they had never seen them growing as plants... It was such a novel experience for them that it will stay with them for a long time."

Box 7. The farm as being integral to the school ethos:

The necessity of projects like the terrace farm becoming a sustained and integral part of the school ethos cannot be stressed enough. A one-off activity may leave an impression on students, but it usually falls short of creating an impetus for further action. For e.g., feedback and reflections stemming from continuous interactions with activities/ artefacts on the farm has helped nurture broader environmental sensibilities.

For projects like these to be integrated with a school's ethos, they need to be considered central to the student's educational experience rather than being relegated to an extra-curricular activity. This requires the support and involvement of the school management, teachers, and parents. For e.g., the terrace farm is slowly beginning to expand its sphere of influence. Teachers are being encouraged to draw linkages with the subjects they teach. Parents are being encouraged to volunteer in this project in their free time. Outreach to the neighbourhood is being initiated through student designed and facilitated hands-on workshops on composting, growing edible plants etc.

To conclude

Urban spaces are generally seen as being far removed from Nature. This idea perpetuates the notion that cities exist separate from Nature, and urban human habitations can only have adverse impacts on the environment. Practices such as urban farming question this idea. Establishing a relationship with soil through the food we eat can be a powerful counter-narrative to dominant modes of production and consumption. A food farm provides a diversity of themes for discussion with students – these range from local geography and biology, to economics and history. In many cases, inter-relationships between these perspectives are more easily

Glossary:

Frugality: Being careful and sparing in the use of materials. In this context, it refers to resources sourced in the form of planters, water, and other supporting structures.

Mulching: The process of covering the soil surface with a thin layer of organic material (plastic sheets may be used in colder areas) to retain soil moisture, increase fertility, and prevent weed growth. In this context, dry leaves or dry sugarcane fibres (called bagasse and easily available from sugarcane juice vendors) were used for mulching.

Probiotic: Refers to micro-organisms that contribute to the health of the human gut. In this context, an analogy is being drawn to compare microbes in cow-dung acting as probiotics for soil by improving its fertility.

Reciprocity: In this project, reciprocity refers to the perspective of developing a two-way relationship with plants based on care and empathy. We care

for the plants and their extended environment, and one could argue that our care is validated through the harvest we receive in the form of vegetables and fruits.

Somaesthetics: is a field of study that emphasizes the role of sensory experience in aesthetic appreciation.

Sovereignty: In this context, sovereignty refers to the rights of food producers (farmers) and consumers to decide the mechanisms, policies, and economics of food production in a sustainable manner. This includes the right to save seeds (instead of relying on agri-business companies to sell and control hybrid seeds) and becoming self-reliant.

Stewardship: Refers to the idea of being responsible and capable of caring for the local environment.

Trellis: An open architectural structure usually made of interwoven strips of wood to support the growth of climbers and creepers.



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understood through one's experience with the farm, and the community that grows around it.

As a collaborative space, a terrace farm allows experiments with different forms of teaching, like peer learning and

apprenticeship. It opens up multiple sensory modalities as pathways for learning. It can also demonstrate that grand slogans such as "Save the Earth!" may not be necessary in cultivating good environmental practices, because

in reality it is our **relationship** with Nature that needs saving. In fact, engaging with environmental issues in

abstraction can result in inaction and desensitisation. By creating tangible connections, urban farms offer us the

opportunity to restore a relationship of care, reciprocity, and respect for Nature. Hope is literally beneath our feet.

Key takeaways

- Tokenistic environmental activities and bleak scenarios of environmental degradation can leave students acutely aware of 'big' problems, but disempowered to bring about any transformation in their own lives.
- Being able to provide students with authentic experiences of engaging with the local environment is important in fostering an understanding of diverse ecological practices.
- Terrace farms offer one way of combining ideas of 'authentic participation' with possibilities of practice in land-scarce megacities.
- Working on the terrace farm:
 - introduced students to ways of perceiving the environment through touch, smell, and taste vs. just their eyes.
 - posed challenges that would often motivate students to come up with novel solutions.
 - offered students the impetus to widen the scope of their engagement to include composting, upcycling, reducing wastage of food, and growing plants in spaces outside school.
 - led students to reflect on more thoughts pertaining to the environment in general, and engage in community outreach efforts including seed and sapling exchange.
 - offered teachers the opportunity to experiment with different forms of teaching, like peer learning and apprenticeship.
- The involvement of schools in projects like terrace farming challenges the notion that urban human habitations can only have adverse impacts on the environment, while creating tangible connections that help restore a relationship of care, reciprocity, and respect for Nature.



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